

## Danisco Animal Nutrition discusses benefits of natural betaine

Feed additive pioneer Danisco Animal Nutrition looked at the benefits of using natural betaine in animal production during a seminar it hosted in Bangkok.

Dr Gary Partridge, Danisco Animal Nutrition's Development and Technical Director, started the seminar with an explanation of the significance of betaine, a trimethyl derivative of the amino acid glycine which naturally occurs in relatively large quantities in aquatic invertebrates and sugar beet.

He mentioned that Betafin, Danisco Animal Nutrition's natural betaine product, is unique in that it comprises a completely natural, pure form extracted from sustainable sugar beet molasses

and vinasses (fermented molasses) using a patented chromatographic separation process.

He highlighted recent studies at Massey University, New Zealand, where broilers under controlled heat stress showed a significant improvement in body weight corrected feed conversion ratio (FCRC, 6.6%) with Betafin natural betaine supplementation compared with birds offered synthetic anhydrous betaine or betaine HCl.

Similarly, in a broiler coccidiosis challenge model run at the same university, birds offered diets containing natural betaine gave significant improvements in ileal amino acid and energy digestibility of a greater order of magnitude than

those offered by synthetic anhydrous betaine or betaine HCl – offering over USD 13/ tonne of feed more value than the alternative products.

Prof Frank Dunshea from the Department of Agriculture and Food Systems at The University of Melbourne continued the seminar by focusing his presentation on research work that demonstrates how natural betaine can reduce the maintenance energy requirements of farmed livestock through positive effects on osmoregulation.

He said that during periods of physiological stress, betaine can be used to spare maintenance energy, leaving more metabolic energy for productive purposes, such as carcass lean gain

(assuming there is also sufficient amino acid supply to fuel this lean gain).

In an exciting vision of the future, R&D Consultant and Editor Dr Pierre Cronjé drew attention in his presentation to the recently published links between natural betaine, AMP-activated protein kinase (AMPK) and tumour necrosis factor alpha (TNF- $\alpha$ ). The studies have shown the potential of betaine to activate AMPK, thereby reducing the negative effects of TNF- $\alpha$ .

"This finding has profound implications for the treatment of a wide range of metabolic conditions such as fatty liver in broilers, haemorrhagic fatty liver syndrome in layers, ascites in broilers and heat stress," he said.